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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,286	11/26/2003	Ming-Hsiung Lin	BHT-3111-376	5476

7590 04/09/2007  
BRUCE H. TROXELL  
SUITE 1404  
5205 LEESBURG PIKE  
FALLS CHURCH, VA 22041

EXAMINER
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LU, JIA

ART UNIT	PAPER NUMBER
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2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/09/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/721,286	LIN, MING-HSIUNG	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jia Lu	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7 is/are allowed.
- 6) ☒ Claim(s) 8 and 11-15 is/are rejected.
- 7) ☒ Claim(s) 9 and 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 8, 11-15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claim 8, claimed invention discloses a signal processing method comprising choosing base functions and a frequency function to generate a carrying function, however it does not provide for practical application by physical transformation (see Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility, p19).

Claims 11-15 do not provide physical transformations to overcome 101 rejection of claim 8.

### ***Allowable Subject Matter***

Claims 1-7 are allowed.

Prior art failed to show a signal processing method comprising the steps of sampling a data signal to obtain a carrying function; wherein a data signal is sampled and the total sampling number is  $m$ , and each sample obtains a quantization value

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expressed as  $b_{\text{sub}.i}$ ,  $i=1 \dots m$ ; wherein said carrying function can be obtained according to the following steps: choosing plural base functions and a frequency function  $f(t)$ ; wherein each base function satisfies the following conditions: a. being an even function or an odd function; b. being a continuous function; c. being a periodic function, which period is  $T$ ; d. being orthogonal with other base functions; wherein each base function  $g(n, t)$  can be expressed as a form of  $h^*(nTt/k)$ :  $h$  representing a function form,  $k$  representing the total number of said plural base functions,  $n$  representing the  $n$ -th base function,  $t$  representing the time variable; wherein bandwidth of said frequency function  $f(t)$  is  $f_{\text{sub}.n}$  and period of said frequency function  $f(t)$  is  $T$ ; using said plural base functions and said frequency function to generate said carrying function, which can be expressed as:

$$F(n, t) = \frac{T}{k} \sum_{i=1}^k \left[ f\left(t + \frac{T}{k}i\right) g\left(n, \frac{T}{k}i\right) \right]$$

and encoding said sampled data signal by said carrying function to obtain a transmission signal, which bandwidth is  $f_{\text{sub}.n}$  and can be expressed as:

$$SM(t) = \sum_{i=1}^n b_i F(i, t).$$

Claims 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jia Lu whose telephone number is 571-272-6042. The examiner can normally be reached on 8:30-4:30, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jia Lu  
Examiner  
Art Unit 2611

  
DAVID C. PAYNE  
SUPERVISORY PATENT EXAMINER